

Bearing Temperature Sensors

BETTER BY DESIGN

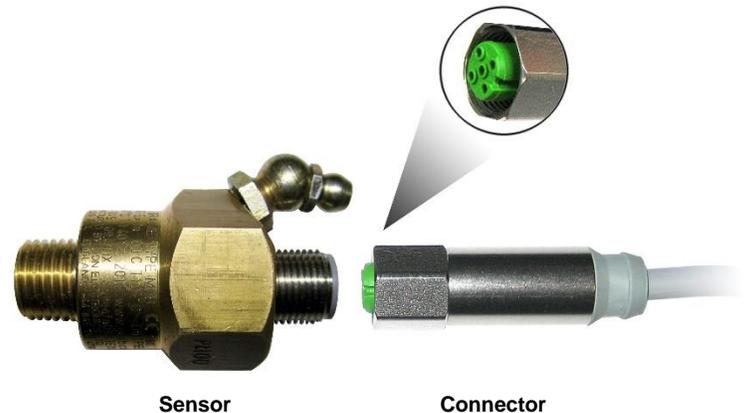
MDB8 Series Bearing Temperature Sensors

APPLICATION

For use on any application where bearing temperature monitoring is desired or required.

METHOD OF OPERATION

The MDB8 series is a range of bearing sensors manufactured to screw directly into a bearing housing through the existing 1/4" BSP threaded grease zerk (can be installed in 1/8" NPT grease zerk fitting with an adapter). Each sensor is fitted with a grease zerk to allow lubrication of the bearing without the need for removal of the sensor. The sensor is fitted with a M12 connector for use with a separately supplied cable and socket assembly which can be attached connected directly to a PLC or to a hazard monitoring system, such as 4B's T500 Hotbus Elite, Watchdog Elite, or T400 Elite. The connections are not polarity sensitive therefore special connection requirements are eliminated. Four versions are available: NTC thermistor or PT100 type for continuous temperature, and PTC or Contact thermistor models with three trip points.



Sensor

Connector



FEATURES

- ▶ Screw in Installation
- ▶ Grease Zerk for Bearing Lubrication
- ▶ M12 Wiring Connector
- ▶ NTC or PT100 Versions: Continuous Temperature
- ▶ PTC or Contact Versions: Trip Points from 140°F (60°C) to 176°F (80°C)
- ▶ Minimum Operating Temperature: -13°F (-25°C)
- ▶ Maximum Operating Temperature: 194°F (90°C)
- ▶ ATEX Zone 22 Approved

PART NUMBERS/ACCESSORIES

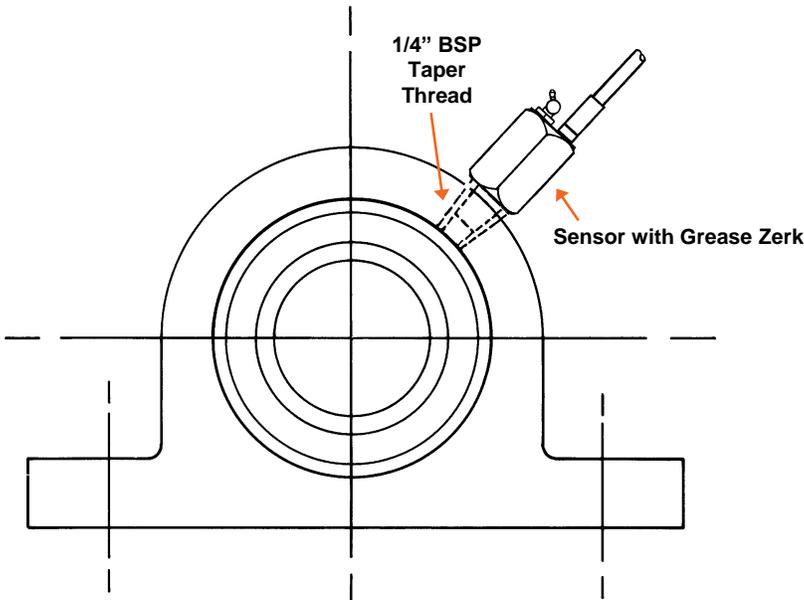
- ▶ MDB810V3AI – NTC Type (Continuous)
- ▶ MDB819V3AI – PT100 Type (Continuous)
- ▶ MDB812V3AI – PTC Type (140°F / 60°C Trip)
- ▶ MDB813V3AI – PTC Type (158°F / 70°C Trip)
- ▶ MDB814V3AI – PTC Type (176°F / 80°C Trip)
- ▶ MDB832V3AI – Contact Type (140°F / 60°C Trip)
- ▶ MDB833V3AI – Contact Type (158°F / 70°C Trip)
- ▶ MDB834V3AI – Contact Type (176°F / 80°C Trip)

ACCESSORIES (CABLE)

- ▶ CA4SW03AI – 3m Long Cable, M12 to Bare Wire End
- ▶ CA4SW05AI – 5m Long Cable, M12 to Bare Wire End
- ▶ CA4SW10AI – 10m Long Cable, M12 to Bare Wire End
- ▶ CA4SW30AI – 30m Long Cable, M12 to Bare Wire End
- ▶ CA4SP03AI – 3m Long Cable, M12 to M12 Plug End
- ▶ CA4SP05AI – 5m Long Cable, M12 to M12 Plug End
- ▶ CA4SP10AI – 10m Long Cable, M12 to M12 Plug End
- ▶ CA4SP30AI – 30m Long Cable, M12 to M12 Plug End

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Installation of Bearing Temperature Sensor



Example of Bearing Failure

TECHNICAL SPECIFICATIONS

MDB8 Series Bearing Temperature Sensors

NTC Sensors	
Resistance at 77°F (25°C):	10,000 Ohms
Resistance at 140°F (60°C):	3,043 Ohms
Resistance at 194°F (90°C):	1,264 Ohms
Sensing Voltage:	24 VDC Typical
Maximum Current:	1 mA

PTC Sensors	
Resistance at 77°F (25°C):	250 Ohms
Resistance at 9°F (5°C) <u>Below</u> Trip:	550 Ohms
Resistance at 9°F (5°C) <u>Above</u> Trip:	1,300 Ohms
Sensing Voltage:	24 VDC Typical
Maximum Current:	20 mA

Contact Sensors	
Resistance Below Set Point:	Closed Circuit
Resistance at or Above Set Point:	Open Circuit
Sensing Voltage:	24 VDC Typical
Maximum Current:	1.5 amps

PT100 Sensors	
Resistance at -13°F (-25°C):	90.19 Ohms
Resistance at 32°F (0°C):	100.00 Ohms
Resistance at 140°F (60°C):	123.24 Ohms
Resistance at 194°F (90°C):	134.71 Ohms
Sensing Voltage:	24 VDC Typical
Maximum Current:	1 mA

Bearing Temperature Sensors can be used with the following 4B Hazard Monitoring Systems



T500 Hotbus Elite



Watchdog Elite

